
# IVANHOE

## METAL REFLECTORS AND FITTINGS

*for*

## INDUSTRIAL ILLUMINATION

CATALOG NUMBER 320-A
Superseding Catalog No. 320

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## HOW TO PLAN A LIGHTING SYSTEM

# PASTE THIS SHEET INSIDE CATALOG No. 320-A

This is a new catalog listing Ivanhoe Metal Reflectors and Fittings for Industrial Illumination. The Ivanhoe line has been revised, some numbers being discontinued, while new developments and designs have been added.

Holders Nos. 608 and 609 are new products. They fit B-heel reflectors which are provided with two lugs, as illustrated herein.

Until January 1, 1924, all B-heel reflectors for use with the No. 608 and No. 609 holders must be specified as BEDD-100 *with lugs*, BEB-200 *with lugs*, BEL-75 *with lugs*, etc. They must be ordered with the holders to avoid confusion.

Unless B-heel reflectors *with lugs* are specified on an order, the reflector without lugs will be supplied until present stocks are exhausted, after which time all B-heel reflectors will become standard with lugs.

The lugs will not interfere with the use of the other Ivanhoe 2¼" and 3¼" holders listed in this catalog.

IVANHOE-REGENT WORKS
of General Electric Co.


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## METAL REFLECTORS AND FITTINGS

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## INDUSTRIAL ILLUMINATION

CATALOG NUMBER 320-A
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## HOW TO PLAN A LIGHTING SYSTEM

IVANHOE-REGENT WORKS
of General Electric Company
CLEVELAND, OHIO

*Manufacturers of Ivanhoe Metal Reflectors and Illuminating Glassware*

*August 29, 1923*

# SERVICE TO LAMPS

Mazda lamps are the most convenient and economical means of providing light. But whereas an installation of bare Mazda lamps will produce a good volume of light, the light radiates from the lamps in all directions, and a great deal of it is wasted. Besides, such light is glaring, and the shadows are deep and sharp.

In other words, light from bare Mazda lamps is raw material.

To utilize this raw material most effectively is the idea incorporated in the Ivanhoe slogan of Service to Lamps. Light, to be useful, must be transformed into illumination. The light must be directed where it is needed, and its quality improved by diffusion so that glare is reduced and shadows softened. These results are brought about by the use of scientifically designed reflectors, installed in accordance with approved engineering practice.

The need for good artificial illumination is evident when it is considered that near the middle of the day a work-bench near a window may have an intensity of ten or fifteen foot candles of daylight. The light will be well diffused, casting shadows that are soft and luminous, so that the workman can perform his duties with ease and comfort. It is obvious that when darkness comes on the work must suffer if it is performed under light of one or two foot-candles, and improperly reflected so that glare and sharp shadows are present.

It has been found by careful tests that Productive Intensities have increased production from 6 to 33% over that in poorly lighted rooms or work shops.

Productive Intensities approximate very closely, both in quality and quantity, average daylight illumination received upon the work.

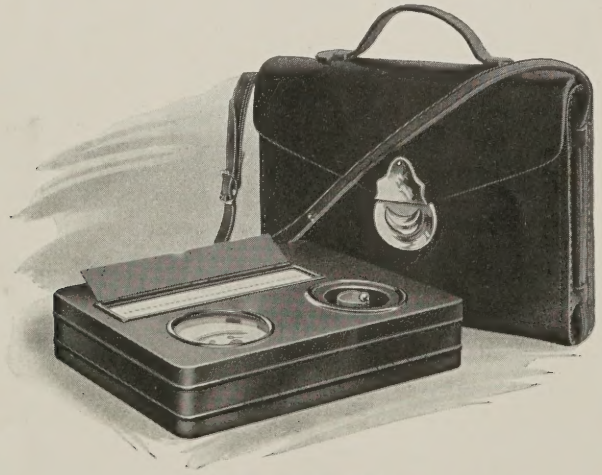
The tests were all conducted in metal working shops where the class of work ranged from rough machining and assembling to accurate tool work. Records of production with an inadequate lighting system were kept and then with a properly designed system where the latest types of Mazda lamps and Industrial Reflectors were used.

Plants are operating today where an improvement in the lighting would mean a like increase in production.

In order that illumination intensities may be measured conveniently, the Foot-Candle Meter was perfected. This instrument is shown below. As the name implies, it is an instrument for measuring illumination intensities in foot-candles, the unit of measurement. The foot-candle is the unit of measurement of illumination intensity, as the degree Fahrenheit is the unit of measurement of temperature, or pounds per square inch the unit of measurement of pressure.

There is no longer any reason for doubt or uncertainty regarding a lighting system. Ivanhoe representatives are at your service with a Foot-Candle Meter and practical engineering knowledge of illuminating requirements.

There is an Ivanhoe reflector for every service, to make good the Ivanhoe slogan of Service to Lamps. But the final Ivanhoe ideal is Service to Industry—a service which improves working conditions so as to increase production, reduce spoilage, and raise the standard of quality of the goods manufactured.



*The Foot-Candle Meter*

# HOW TO PLAN A LIGHTING SYSTEM

## CLASSES OF LIGHTING

It is the object of this section to give general engineering data which will assist in providing better illumination most economically, without entering into a discussion of fundamental principles.

The first consideration in making a light installation should be to decide what kind of lighting is best adapted to the particular industry involved.

All industrial lighting may be divided into three classes: General Overhead lighting, Group Lighting, and Local Lighting.

### General Overhead Lighting

With General Overhead Lighting, the room is lighted as a whole without reference to the work done at any particular point. With this system the light should be sufficient for the character of work performed at every point in the room. The distributed unit system is employed, in which lights are arranged in imaginary squares, or rectangles nearly square.

Where coarse work is performed the squares may be large; where fine work is performed they should be small. A size of square and mounting-height which call for the use of the standard Bowl or Dome reflector (see page 8) is usually the best.

For coarse work, however, and for such places as warehouses, distributing type reflectors are desirable, with the spacing between outlets from two to two and one-half times the mounting-height.

### Group Lighting

Group Lighting, or, as it is often called, Localized General Lighting, consists in lighting a particular group of machines, or a particular area by Overhead Lighting. It is sometimes difficult to distinguish between General Overhead Lighting and Group Lighting, but in the former the room itself is lighted without reference to the location of the work, while in the latter the lights are always placed with particular reference to the location of the work.

### Local Lighting

Local Lighting is the lighting of any individual machine or operation, usually with a single lamp and reflector. It is ordinarily employed to supplement General Overhead Lighting of low intensity. Local Lighting is used on work-benches, lathes, sewing-machines, punch-presses, drawing-presses, or for any kind of work where a light may be needed from a nearly horizontal direction, or where a high intensity of illumination is required over a small area.

*Figure 1. Installation of Glassteel Diffusers in a Machine Shop. A good sample of General Lighting where maximum light diffusion is essential.*

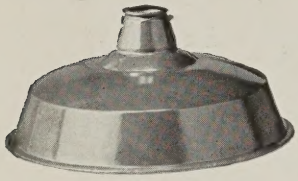
# WHERE AND HOW TO USE DIFFERENT TYPES OF REFLECTORS

In order to meet all the requirements of industrial plants, the Ivanhoe line offers several types of standard reflectors for each class of lighting. These may be grouped as they apply to the three general classifications already outlined, namely: General Overhead, Group and Local.

Illumination requirements for General Overhead and Group Lighting being such that the same reflectors are usually applicable to both classes of service, the following general classification may be made.

| | |
|---|---|
| For General Overhead and Group Lighting | R L M Standard Dome Reflectors<br>The Glassteel Diffuser<br>Standard Bowl Type Reflectors<br>Glass-Top Reflectors<br>Vapor-proof Reflectors. |
| For Local Lighting | Small Angle Type Reflectors<br>Small Bowl Type Reflectors<br>Special Service Reflectors |

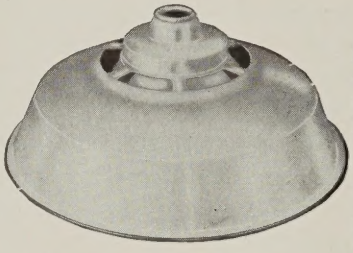
## The R L M Standard Dome



These reflectors are generally applicable to any industries which may be classified as Rough Manufacturing, Medium Manufacturing, or Fine Manufacturing. With them a great deal of light is directed at the higher angles, and they are, therefore, especially suitable for operations where the work is performed on vertical surfaces. The depth of the R L M standard dome is such that ample protection from the glare of the lamp filament is provided when the reflector is used on the average mounting-height. However, best practice requires that bowl-enameled lamps be used in order to conceal the lamp filament.

When these reflectors are used it will usually be in accordance with the rules for General Overhead Lighting. The distance apart should be approximately one and two-thirds times the mounting-height above the work. This ratio can be increased to two or two and one-half where uniform illumination is not required, as in warehouses and spaces where rough work is performed.

## The Glassteel Diffuser



The Glassteel Diffuser, designed for high wattage Mazda C lamps, is a combination consisting of an extra large dome reflector and an enclosing globe of light-density diffusing glass that entirely surrounds the lamp. The large reflector and diffusing globe greatly reduce brightness and afford excellent diffusion. The top of the reflector is perforated, through which light passes upward so that the entire workroom may be lighted. The enclosing globe permits the use of the high wattage lamps necessary for high intensities with a minimum of glare. All these features combine to closely simulate the intensities, diffusion, soft shadows, general lighting and ideal qualities so desirable in daylight illumination.

The reflector is white porcelain enameled inside and outside and with the white opal globe is inconspicuous even though it is large in size. The finish of the reflector and smooth surface of the glass make cleaning easy.

It is designed for use in those industries where the highest type of illumination is desired; where high intensities are essential; where direct or reflected glare must be eliminated; where diffusion of light is required for distribution and to prevent dense shadows, and where work on vertical surfaces predominates.

*Figure 2. R L M Standard Dome Reflectors equipped with Bowl-enameled Mazda C Lamps. A productive intensity installation. Note the absence of glare and sharp shadows.*

One very distinct advantage for this unit is the fact that Mazda C Daylight lamps may be used with but very little change in color of the light as produced by these lamps. For utmost efficiency these lamps should be used clear and the Glassteel Diffuser at once provides an efficient accessory eliminating the brightness of the clear bulb lamps.

It should be spaced not more than 1½ times the mounting-height above the work for uniform illumination.

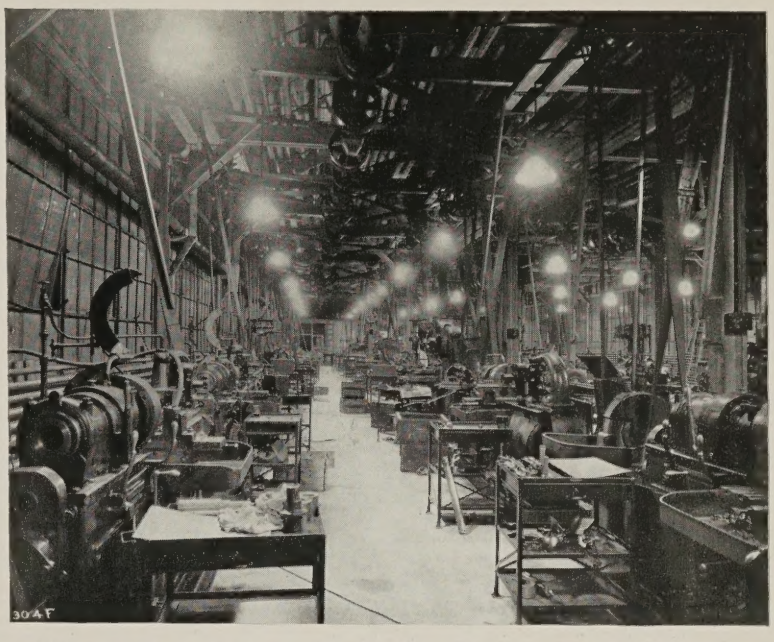
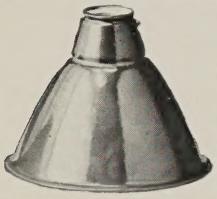


*Figure 3. An Installation of Ivanhoe Glass-Top Dome Type Reflectors. Note the Illumination of the Equipment above the Level of the Reflectors.*

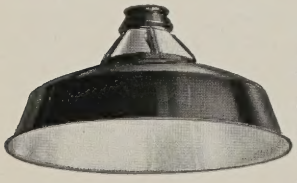
### The Standard Bowl Reflector



Rules for the installation of the bowl type reflector are very closely related to those given for the Dome Type in a preceding paragraph, but with this type the lamp filament is shielded at a lower angle, and they are sometimes preferable to Dome reflectors for General Overhead Lighting. For the same reason they are especially suitable for installations where reflectors must be mounted low, in order that operators will not be annoyed by excessive glare. The distribution of light is rather strongly downward, and for this reason they are preferable for installations where reflectors must be mounted at a considerable height to clear cranes, or to conform to the construction of the building. Bowl reflectors are also suitable, in the smaller sizes, for Local Lighting where a high intensity is desired over a small area.

Bowl reflectors should be spaced a distance apart approximately one and two-thirds times the mounting-height above the work for either General Overhead or Group Lighting, and when used for Local Lighting, must, of course, be located with reference to the work.

### Glass-Top Reflectors



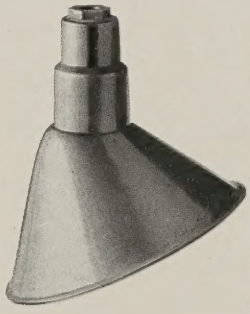
This type is a development for use in factories where the general appearance of the workroom is considered essential to good workmanship and contentment of employees.

The popular Dome Type is available in this new design. This standard form is used, with a small portion of the top cut away. The opening is covered with a light density, diffusing glass cover permitting a small amount of light (from 8 to 10%) to pass upward, in order that the ceiling and top walls may be illuminated to a desirable brightness.

This feature relieves the contrast in brightness between the area below and above the lighting units, and can be noted by comparing Figs. 2 and 3. The light above the unit also serves to illuminate the pulleys, line shafting and other machinery above the level of the reflectors so that repairs can be made conveniently.

The efficiency of these reflectors varies but a small percentage in the amount of light directed to the working area as compared with the standard RLM Dome Type reflectors, so that their application is the same as for those reflectors described in preceding paragraphs.

### Angle Type



Angle type reflectors may be classified as special service reflectors. They are particularly desirable in the large sizes in such industries as erecting shops, machine shops where traveling cranes are used overhead, and similar classes of work. In such installations the overhead lighting often comes from reflectors mounted rather high, and it is usually necessary to build up the illumination on the working plan from the side. In such cases Angle Reflectors are mounted along the side walls below the crane rails, at a suitable mounting-height, the distribution being such that the light is directed away from the wall, and toward the center of the room. Both the horizontal and vertical illumination is built up, and light is received upon the work from each side, as well as directly overhead. This is an advantage in softening shadows. In the smaller sizes this type is very good for Local Lighting, where

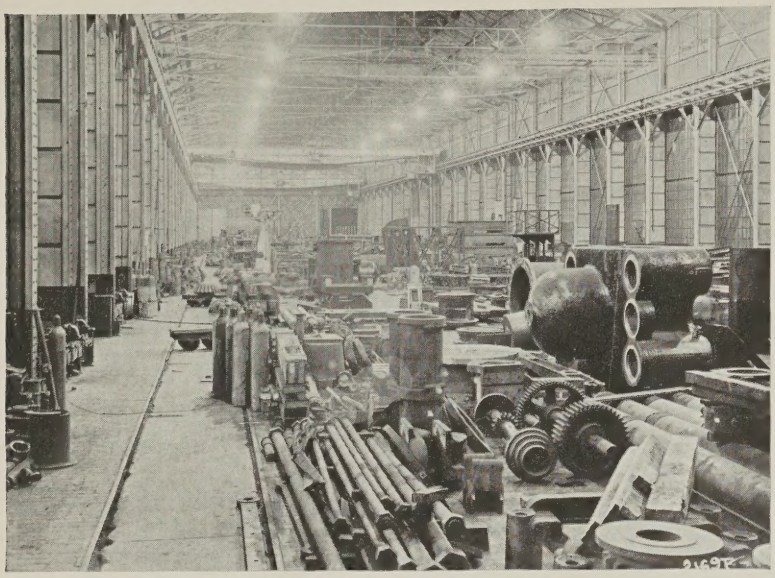
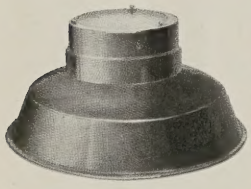


*Figure 4. A Good Example of Illumination of a Large Interior. Reflectors mounted 40 feet above the floor. Ivanhoe R L M Standard Dome or Bowl Type Reflectors are suitable for this Class of Service.*

outlets must be located close to the work and it is desirable to screen the lamps from the operator.

Angle reflectors are required for sign and billboard lighting, and are being used extensively for this class of service lighting. Special installation data is available for this class of service and may be had on request.

### Vapor-Proof Reflectors



Vapor-proof fittings afford a safe means of providing illumination for such industries as powder plants, flour mills, oil refineries and similar industries where it is essential that electrical connections and lamps be protected from acid fumes or inflammable dust or vapors. In order that the light from these fittings may be efficiently utilized there are Ivanhoe reflectors made to fit the equipment available.

The RLM Dome form has been adapted for use on these fittings, therefore the performance characteristics are very similar. The angle of cut-off and distribution are about the same with slightly lower efficiency due to the large fitter and use of the globe and guard. They are porcelain-enamel finished inside and outside to stand up under the severe service conditions expected.

They should be spaced one and two-thirds times their mounting-height above the work.

### Mazda C Enclosing Units

With the advent of the larger sizes of Mazda C lamps, there came a demand for this type of completely enclosing units for display lighting, for store fronts, and similar outdoor lighting. These units are of heavy construction, and will stand up satisfactorily under the varying conditions of the weather. The globes are excellent diffusers and their absorption is low.

This type of unit is sometimes used indoors, for General Overhead Lighting, and in such cases it is preferable to use the unit with the reflector in order to take advantage of the increase in downward light.

### Wide Type Reflectors

The Flat Concentric Reflector should be used only for outdoor lighting, as in yards, and on platforms, where a wide distribution of light is required, and it is not important that the lamps be screened. Reflectors are furnished in the R style only, with a solid top of rigid construction, containing a porcelain socket. The reflectors are weatherproof and easy to wire.

### Shallow Dome Reflectors

The Shallow Dome Type also produces a wide distribution of light, but is deeper, affording much better protection from the bright filament.

This type is suitable for indoor installations on wide spacing, in storage spaces, and similar locations where close vision is not required. This type is available in both paint-enamel and porcelain-enamel finishes.

### Reflectors for Mill Type Lamps

Where the lamp must be located near the work and is subject to excessive vibration or abuse in handling, the Mazda Mill Type is the most serviceable. There are several types of Ivanhoe reflectors available for these lamps, including the Bowl, Angle and Dome types. These reflectors are small in diameter and deep in order to conceal and protect the lamp. A special small reflector is made for use on power machines where it is located close to but must not conceal the work.

### Special Service Reflectors

There are some requirements which can only be met with specially designed reflectors. Tennis Courts, Sewing Machines, Mail Cases and other localized operations all require special equipment. Ivanhoe reflectors for Special Service have been designed to produce certain predetermined results best serving these individual requirements.

# INTENSITY OF LIGHT REQUIRED FOR VARIOUS KINDS OF WORK

For the effective and economical production of work, it is important that a sufficient intensity of light be provided. The following table shows the intensities in foot-candles required for various classes of manufacturing. These intensities apply under all average conditions and represent present standard lighting practice, having been revised in accordance with the present practice of specifying Productive Intensities.

A range of choice is provided by recommending limits of intensity, as "3 to 6," "5 to 10," "8 to 16," "10 and upward." For best results it is preferable to supply wattage for the higher intensities.

**Rough Manufacturing; 3 to 6 Foot-Candles:** Rough Assembling, Rough Forging, Rough Woodworking, Ice Making, Potteries, Lumber Mills, Tanneries, etc.

**Medium Manufacturing; 5 to 10 Foot-Candles:** Medium Woodworking, Rough Machining, Rough Benchwork, Automatic Machine Work, Meat Packing, Paper Making, Laundries, Bakeries, etc.

**Fine Manufacturing; 8 to 16 Foot-Candles:** Fine Assembling, Leather Working, Fine Woodworking, Fine Lathe Work, Tobacco Manufacturing, Fine Sheet Metal Working, Light-Colored Textiles, etc.

**Extra Fine Manufacturing; 10 Foot-Candles and Upward:** Watch and Jewelry Manufacturing, Engraving, Type-Setting, Shoe Manufacturing, Enameling, Dark-Colored Textiles, etc.

# WATTS PER SQUARE FOOT REQUIRED FOR DIFFERENT INTENSITIES

The following values have been computed on the basis of the average lumens per watt for the most common sizes of Mazda C lamps, and the approximate utilization factor for the conditions assumed. Ample allowance has been made to cover depreciation in the light output due to the collection of dust, aging of lamps, etc.

These tables are presented for the convenience of those who wish to provide the intensities recommended for various classes of manufacturing.

The factors, such as .19, .23, .27, etc., represent the wattage per square foot required to produce certain foot-candle intensities with various reflector and lamp equipment for large and small rooms.

Locate the factor for the type of reflector and lamp to be used, opposite the foot-candle intensity as determined from the above table. Multiply this factor by the total floor area in square feet and the product will be the total wattage required. If this total wattage is divided by the number of outlets, the proper lamp size will be determined.

| Intensity in Foot Candles | Type Lamp | WATTS PER SQUARE FOOT WITH VARIOUS TYPES OF REFLECTORS | | | | | |
|---|---|---|---|---|---|---|---|
| | | One Row of Outlets | | | More Than One Row of Outlets | | |
| | | R L M Dome | Bowl | Glassteel Diffuser | R L M Dome | Bowl | Glassteel Diffuser |
| 1 | Mazda C Clear | .19 | .23 | .22 | .15 | .19 | .20 |
| 2 | | .36 | .44 | .43 | .29 | .35 | .35 |
| 3 | | .52 | .61 | .60 | .42 | .50 | .49 |
| 4 | | .64 | .79 | .78 | .52 | .65 | .65 |
| 5 | | .81 | .95 | .93 | .65 | .78 | .75 |
| 6 | | .97 | 1.15 | 1.10 | .78 | .94 | .90 |
| 8 | | 1.20 | 1.50 | 1.45 | .97 | 1.20 | 1.15 |
| 10 | | 1.45 | 1.80 | 1.75 | 1.20 | 1.45 | 1.40 |
| 12 | | 1.80 | 2.15 | 2.10 | 1.45 | 1.70 | 1.70 |
| 16 | | 2.30 | 2.70 | 2.65 | 1.85 | 2.20 | 2.10 |
| 1 | Mazda C Bowl-Enameled | .22 | .26 | .... | .19 | .23 | .... |
| 2 | | .43 | .51 | .... | .35 | .42 | .... |
| 3 | | .60 | .72 | .... | .49 | .59 | .... |
| 4 | | .78 | .93 | .... | .65 | .78 | .... |
| 5 | | .93 | 1.11 | .... | .75 | .90 | .... |
| 6 | | 1.10 | 1.32 | .... | .90 | 1.08 | .... |
| 8 | | 1.45 | 1.74 | .... | 1.15 | 1.38 | .... |
| 10 | | 1.75 | 2.10 | .... | 1.40 | 1.68 | .... |
| 12 | | 2.10 | 2.51 | .... | 1.70 | 2.04 | .... |
| 16 | | 2.65 | 3.17 | .... | 2.10 | 2.40 | .... |

# LOCATION OF OUTLETS

It is important in any class of lighting that outlets be properly located. This applies to all three classes of lighting previously described; namely, General Overhead Lighting, Group Lighting and Local Lighting. It is obvious that for Local or Group Lighting outlets should be located with reference to the work. For General Overhead Lighting, however, it is desirable to locate outlets

symmetrically, employing the distributed unit system. For this system outlets are located at the centers of imaginary squares or rectangles nearly square. Ceiling heights and the sizes of bays are the important factors controlling the location of outlets for this system.

The distribution characteristics of a reflector must also be considered. The maximum spacing or distance between outlets for a reflector when suspended a certain height above the work is determined from its distribution. Therefore, a definite factor expressing this relation can be determined. When this relation is followed, uniform illumination will result. The following table has been compiled, showing the maximum distances between outlets for different types of reflectors when reflectors are suspended at stated distances above the floor, considering the work on a plane 2 feet 6 inches above the floor. The spacing can be determined when the mounting-height is the controlling factor, or vice versa.

# SPACING AND MOUNTING-HEIGHT TABLE

| Mounting-Height Above Floor Feet | Maximum Spacing Distance Between Outlets (For Plane 30 Inches above the Floor) | | Mounting-Height Above Floor Feet | Maximum Spacing Distance Between Outlets (For Plane 30 Inches above the Floor) | |
|---|---|---|---|---|---|
| | R L M Standard Dome, or Bowl Type Feet | Glassteel Diffuser Feet | | R L M Standard Dome, or Bowl Type Feet | Glassteel Diffuser Feet |
| 9 | 11 | 10 | 13½ | 18 | 16½ |
| 9½ | 12 | 10½ | 14 | 19 | 17 |
| 10 | 12½ | 11 | 14½ | 20 | 18 |
| 10½ | 13 | 12 | 15 | 21 | 19 |
| 11 | 14 | 13 | 16 | 22½ | 20 |
| 11½ | 15 | 13½ | 17 | 24 | 22 |
| 12 | 16 | 14 | 18 | 26 | 23 |
| 12½ | 17 | 15 | 19 | 27½ | 25 |
| 13 | 17½ | 16 | | | |

# CONSTRUCTION OF IVANHOE REFLECTORS

Ivanhoe reflectors are made with three distinct types of entension to conform to different systems of wiring and installing. These are the B-heel extension, the extension equipped with the D holder, and the R extension.

## The B-Heel Type

The B Heel is the name applied to the fitter at the top of one type of extension. It provides a convenient and practical method of attaching the reflector to a separable holder. Its advantage is, that when the reflector is used with an Ivanhoe socket holder, or any standard Form O Holder, it is possible to complete all wiring before hanging the reflector. The two lugs pressed into the B-heel extensions adapt these reflectors to the Bayonet Spring Coupling Holders Nos. 608 and 609.

## The D Type

A second type of extension is furnished with a brass clip ring reinforced by the D clamp strap, or holder, for attaching directly to brass shell sockets.

To Wire R Type Reflectors, loosen the Lock Nut at the Top of the Extension, and raise the Reflector on the Pipe.

## The R Type

The R Extension makes "Solid Top" units of the reflectors to which it is fitted. The extension is electrically welded to the reflector, making a solid, one-piece unit. The solid metal unit is then covered with porcelain enamel without joints or seams.

A socket fitted with a cap of hexagonal design to fit a half-inch conduit, and a special lock nut, is a part of the reflector. The top of the reflector is stamped to fit the form of the hexagonal cap on the top of the socket. The nut can be screwed tight on the socket without turning the reflector. The construction permits sliding the reflector along the conduit, making the socket easily accessible, as shown in the illustration.

To Hang a D Reflector on a socket, loosen the Screw, snap the Socket into the Ring, and tighten the Screw.

All R Type Reflectors are weather-proof. In addition, the hexagonal top and lock nut construction is a very desirable Ivanhoe feature of special importance. By means of this locking device the reflector is held constantly in the desired position, an advantage in all classes of service, especially such as billboard lighting where reflectors must be held in definite position for best results.

# FINISHES ON IVANHOE REFLECTORS

Ivanhoe reflectors are stamped or drawn of open-hearth steel and supplied in three standard finishes: porcelain enamel, aluminum, and paint enamel.

It has been found that in most classes of manufacturing, the porcelain-enameled reflector is most serviceable, as this finish will stand up under dirt, moisture, and acid fumes with but little deterioration of the reflecting surface. These reflectors are also easy to clean, which is an important factor to consider. Reflectors finished with paint enamel can be used successfully in light manufacturing operations, and in those industries where conditions are generally clean.

**Porcelain Enamel:**

This finish is applied to the inside of the reflectors in three coats. The first is a binding coat, and it is covered by two coats of white porcelain enamel. The outside of the reflectors is treated with the same binding coat, and covered with one application of dark green porcelain enamel.

**Paint Enamel:**

The inside of the reflector is covered with a binding coat, and two coats of glossy white paint enamel. A glossy green paint enamel is applied to the outer surface, and baked on to insure a tough and durable finish. The color is permanent.

# EXPLANATION OF CATALOG NUMBERS

Where standard reflectors are listed, the catalog numbers are made up of letters and numerals as follows:

1. Type of Extension: B, D or R.
2. Kind of Finish: E (for porcelain enamel), P (for paint enamel).
3. Distribution of Light: B (for bowl distribution), D (for distributing distribution), D D (for deep distributing distribution), L (for angle distribution), W (for wide distribution).
4. The size of Mazda lamp recommended for best results is indicated by the numerals.

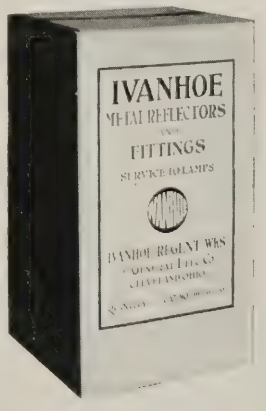
EXAMPLE: The RLM dome reflector with B-heel type fitter and for a 75-watt lamp would be BEDD-75—the first letter denoting the fitter; the second—the finish; the third—the distribution; and the numerals the lamp size.

Reflectors for special service are identified by numbers such as 804, 882, 888, etc.

# FEATURES OF IVANHOE PACKING

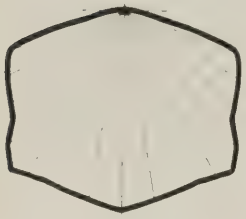
The packing of Ivanhoe Metal Reflectors is at once compact, light and secure. It eliminates the use of materials undesirable from the standpoints of cleanliness and economy of space and at the same time assures a degree of safety in shipping not attained by the use of more bulky systems of packing.

Designed by experts in modern methods of packing, the packages used for shipping Ivanhoe Reflectors occupy little more volume than the Reflectors themselves and add but little to the actual weight of the goods, while providing ample protection and affording clear identification of package contents, all advantages in shipping. The illustrations show the design and label of a typical standard package of Ivanhoe Metal Reflectors.




A Strong, Compact, Clean Shipping Package, also Suitable for Stock Room Storing.


In an Ivanhoe Shipping Carton Metal Reflectors are Protected from Outside Injury or from Movement of the Goods within the Package.



Characteristic Distribution

SCHEDULE R

# R L M STANDARD DOME REFLECTORS

## For Medium Base Sockets

## For 50, 75, 100, 150 and 200-watt Mazda C Lamps

These reflectors are recommended as the highest standard of the distributing type. They are porcelain-enameled, green outside and white inside. For uniform illumination they should be spaced not to exceed one and two-thirds times their height above the work. In ordering, the Ivanhoe number should be given. Dome reflectors for 40, 50 and 60-watt Mazda B lamps are listed on page 21.

### Standard B-Heel Type

**For use with any of the Ivanhoe Holders shown here, or with any standard Form O Holder. The various combinations of reflector and holder are illustrated at the bottom of the page.**

### R Type with Solid Top Containing Porcelain Socket

### Reflectors and Separable Holders

No. 902
Standard Quantity, 50

No. 822
Standard Quantity, 10

No. 908
Standard Quantity, 10

No. 608
Standard Quantity, 10

Complete information on holders is given on page 26.

| Ivanhoe No. Use this number in ordering | R L M Standard Designation | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| *BEDD-50 (For 50-watt Mazda C Lamps) | Dome-50 | 12 1/8 | 5 | 10 | 30 |
| *BEDD-75 (For 75-watt Mazda C Lamps) | Dome-75 | 12 1/8 | 5 1/2 | 10 | 30 |
| *BEDD-100 (For 100 and 150-watt Mazda C Lamps) | Dome-100 | 14 1/8 | 6 1/2 | 10 | 35 |
| *BEDD-200 (For 200-watt Mazda C Lamps) | Dome-200 | 16 3/8 | 7 3/4 | 10 | 40 |

### Weatherproof Reflectors—Solid Extension with Sockets

| | | | | | |
|---|---|---|---|---|---|
| †REDD-50 (For 50-watt Mazda C Lamps) | Dome-50 (For Solid-top Reflectors) | 12 1/8 | 7 3/4 | 10 | 30 |
| †REDD-75 (For 75-watt Mazda C Lamps) | Dome-75 (For Solid-top Reflectors) | 12 1/8 | 8 1/4 | 10 | 30 |
| †REDD-100 (For 100 and 150-watt Mazda C Lamps) | Dome-100 (For Solid-top Reflectors) | 14 1/8 | 9 3/8 | 5 | 20 |
| †REDD-200 (For 200-watt Mazda C Lamps) | Dome-200 (For Solid-top Reflectors) | 16 3/8 | 10 1/2 | 5 | 30 |

*The D types of these reflectors, for attaching directly to brass shell sockets as illustrated on page 8, are the DEDD-50, DEDD-75, DEDD-100 and DEDD-200. They can be obtained at a cost of 15c additional to the List Price of the corresponding B type reflectors.

†Locking sockets will be furnished for 40 cents list additional. Extra Keys, 7 cents each list. Pull chain sockets will be furnished for 80 cents list additional.

B-Heel Reflector—Holder No. 902

B-Heel Reflector—Holder No. 822

B-Heel Reflector—Holder No. 908

B-Heel Reflector—Holder No. 608

SCHEDULE R

# R L M STANDARD DOME REFLECTORS

## For Mogul Base Sockets

## For 300, 500, 750 and 1000-watt Mazda C Lamps

These reflectors are recommended as the highest standard of the distributing type. They are porcelain-enameled, green outside and white inside. For uniform illumination they should be spaced not to exceed one and two-thirds times their height above the work. In ordering, the Ivanhoe number should be given.

Characteristic Distribution

### Reflectors and Separable Holders

No. 622
Standard Quantity, 10

No. 909
Standard Quantity, 10

No. 609
Standard Quantity, 10

Complete information on holders is given on page 27.

| Ivanhoe No. | R L M Standard Designation | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| BEDD-500 (For 300 and 500-watt Mazda C Lamps) | Dome-500 | 18 1/8 | 7 3/4 | 5 | 30 |
| BEDD-1000 (For 750 and 1000-watt Mazda C Lamps) | Dome-1000 | 21 | 10 3/4 | 5 | 60 |

### Weatherproof Reflectors—Solid Extension with Sockets

| | | | | | |
|---|---|---|---|---|---|
| REDD-500 (For 300 and 500-watt Mazda C Lamps) | Dome-500 (For Solid-Top Reflectors) | 18 1/8 | 12 1/2 | 5 | 45 |
| REDD-1000 (For 750 and 1000-watt Mazda C Lamps) | Dome-1000 (For Solid-Top Reflectors) | 21 | 15 1/2 | 2 | 25 |

**Standard B-Heel Type**

**For use with any of the Ivanhoe Holders shown here. The various combinations of reflector and holder are illustrated at the bottom of the page.**

**R Type with Solid Top Containing Porcelain Socket**

B-Heel Reflector—Holder No. 622

B-Heel Reflector—Holder No. 909

B-Heel Reflector—Holder No. 609

Characteristic Distribution

SCHEDULE R

# STANDARD BOWL REFLECTORS

## For Medium Base Sockets

## For 40, 50, 60 75, 100, 150 and 200-watt Mazda Lamps

These bowl reflectors replace the two Ivanhoe lines formerly listed as "Extensive Enamel" and "Intensive Enamel." They are porcelain-enameled, green outside and white inside, and their bowl shape furnishes an effective shield against the glare of the lamp. They should be spaced not to exceed one and two-thirds times their height above the working-plane.

**Standard B-Heel Type**
**For use with any of the Ivanhoe Holders shown here, or with any Standard Form O Holder. The various combinations of reflector and holder are illustrated at the bottom of the page.**

### Reflectors and Separable Holders

No. 902
Standard Quantity, 50

No. 822
Standard Quantity, 10

No. 908
Standard Quantity, 10

No. 608
Standard Quantity, 10

Complete information on holders is given on page 26.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches: Diameter | Dimensions in Inches: Depth | Packing: No. in Standard Package | Packing: Approx. Lbs. Ship'g Weight |
|---|---|---|---|---|---|
| *BEB-50 | 40, 50, 60 Mazda B; 50 Mazda C | 7½ | 5 | 10 | 15 |
| *BEB-75 | 75 | 8½ | 6 | 10 | 15 |
| *BEB-100 | 100, 150 | 9½ | 7¼ | 10 | 20 |
| *BEB-200 | 200 | 10½ | 8⅜ | 10 | 25 |

**R Type with Solid Top Containing Porcelain Socket**

### Weatherproof Reflectors—Solid Extension with Sockets

| | | | | | |
|---|---|---|---|---|---|
| †REB-75 | 50, 60 Mazda B; 50, 75 Mazda C | 8½ | 8¾ | 10 | 30 |
| †REB-100 | 100, 150 | 9½ | 10 | 5 | 20 |
| †REB-200 | 200 | 10½ | 11⅛ | 5 | 25 |

*The D types of these reflectors, for attaching directly to brass shell sockets as illustrated on page 10, are the DEB-50, DEB-75, DEB-100 and DEB-200. They can be obtained at a cost of 15c additional to the List Price of the corresponding B type reflectors.

†Locking sockets will be furnished for 40 cents list additional. Extra keys, 7 cents each list. Pull chain sockets will be furnished for 80 cents list additional.

B-Heel Reflector—Holder No. 902

B-Heel Reflector—Holder No. 822

B-Heel Reflector—Holder No. 908

B-Heel Reflector—Holder No. 608

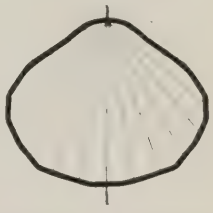
SCHEDULE R

# STANDARD BOWL REFLECTORS

## For Mogul Base Sockets

## For 300, 500, 750 and 1000-watt Mazda C Lamps

These bowl reflectors replace the two Ivanhoe lines formerly listed as "Extensive Enamel" and "Intensive Enamel." They are porcelain-enameled, green outside and white inside, and their bowl shape furnishes an effective shield against the glare of the lamp. They should be spaced not to exceed one and two-thirds times their height above the working-plane.



Characteristic Distribution

### Reflectors and Separable Holders

No. 622
Standard Quantity, 10

No. 909
Standard Quantity, 10

No. 609
Standard Quantity, 10

**Standard B-Heel Type**
**For use with any of the Ivanhoe Holders shown here. The various combinations of reflector and holder are illustrated at the bottom of the page.**

Complete information on holders is given on page 27.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| BEB-500 | 300, 500 | 12½ | 8½ | 10 | 30 |
| BEB-1000 | 750, 1000 | 15¾ | 11⅞ | 5 | 30 |

**R Type with Solid Top Containing Porcelain Socket.**

### Weatherproof Reflectors—Solid Extension with Sockets

| | | | | | |
|---|---|---|---|---|---|
| REB-500 | 300, 500 | 12½ | 13 | 5 | 30 |

B-Heel Reflector—Holder No. 622

B-Heel Reflector—Holder No. 909

B Heel Reflector—Holder No. 609

Characteristic Distribution

SCHEDULE R

# PORCELAIN-ENAMELED ANGLE TYPE

## For Medium Base Sockets

## For 25, 40, 50, 60, 75, 100, 150 and 200-watt Mazda Lamps

Angle Type reflectors are often required where overhead lighting is inadequate and illumination must be built up from outlets placed at the sides of the working area. The reflector is tipped at an angle of 30° from the vertical axis.

The weatherproof, easy wiring R Type is adapted for billboard lighting.

### Standard B-Heel Type

**For use with any of the Ivanhoe Holders shown here, or with any standard Form O Holder. The various combinations of reflector and holder are illustrated at the bottom of the page.**

### R Type with Solid Top Containing Porcelain Socket

### Reflectors and Separable Holders

No. 902
Standard Quantity, 50

No. 822
Standard Quantity, 10

No. 908
Standard Quantity, 10

No. 608
Standard Quantity, 10

Complete information on holders is given on page 26.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| **BEL-50 | 15, 25, 40, 50, Mazda B; 25, 50 Mill Type | 7 | 5½ | 10 | 15 |
| *BEL-75 | 60 Mazda B; 50, 75 Mazda C | 8¼ | 6¾ | 10 | 20 |
| *BEL-100 | 100, 150, 200 | 10½ | 9¼ | 10 | 25 |

### Weatherproof Reflectors—Solid Extension with Sockets

| | | | | | |
|---|---|---|---|---|---|
| †REL-75 | 50, 60, 75 | 8¼ | 9½ | 10 | 20 |
| †REL-100 | 100, 150, 200 | 10½ | 12 | 10 | 35 |

*The D types of these reflectors, for attaching directly to brass shell sockets as illustrated on page 8, are the DEL-50, DEL-75 and DEL-100. They can be obtained at a cost of 15c additional to the List Price of the corresponding B type reflectors.

†Locking sockets will be furnished for 40 cents list additional. Extra Keys, 7 cents each List. Pull chain sockets will be furnished for 80 cents list additional.

**This reflector cannot be used with No. 608 holder.

B-Heel Reflector—Holder No. 902

B-Heel Reflector—Holder No. 822

B-Heel Reflector—Holder No. 908

B-Heel Reflector—Holder No. 608

SCHEDULE R

# PORCELAIN-ENAMELED ANGLE TYPE

## For Mogul Base Sockets

## For 300, 500, 750 and 1000-watt Mazda C Lamps

Characteristic Distribution

Angle Type reflectors are often required where overhead lighting is inadequate and illumination must be built up from outlets placed at the sides of the working area. The reflector is tipped at an angle of 30° from the vertical axis.

The weatherproof, easy-wiring R Type is especially adapted for billboard lighting.

### Reflectors and Separable Holders

No. 622
Standard Quantity, 10

No. 909
Standard Quantity, 10

No. 609
Standard Quantity, 10

Complete information on holders is given on page 27.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| BEL-500 | 300, 500 | 12½ | 11¾ | 5 | 20 |
| BEL-1000 | 750, 1000 | 15¾ | 15¾ | 5 | 30 |

### Weatherproof Reflectors—Solid Extension with Sockets

| | | | | | |
|---|---|---|---|---|---|
| REL-500 | 300, 500 | 12½ | 16 | 5 | 30 |

**Standard B-Heel Type**
**For Use with any of the Ivanhoe Holders shown here. The various combinations of reflector and holder are illustrated at the bottom of the page.**

**R Type with Solid Top Containing Porcelain Socket**

B-Heel Reflector—Holder No. 622

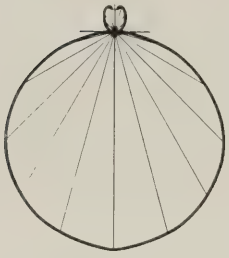
B-Heel Reflector—Holder No. 909

B-Heel Reflector—Holder No. 609

SCHEDULE R

# GLASSTEEL DIFFUSER

## For Medium Base Sockets
## For 100, 150 and 200-watt Mazda C Lamps



Characteristic Distribution

The Glassteel Diffuser consists of an inner glass globe which totally diffuses the light, and a white porcelain-enameled reflector which directs most of the light downward. Apertures in the top of the reflector allow some light to pass upward.

It efficiently produces diffused illumination for those industries where the best quality of illumination is required. They should be spaced one and one-half times their height above the working plane.

Unassembled view of Ivanhoe Glassteel Diffuser. Note the apertures in the top of the enameled reflector.

**Standard B-Heel Type**

**For use with any of the Ivanhoe Holders shown here. The various combinations of reflector and holder are illustrated at the bottom of the page.**

No. 822
Standard Quantity, 10

No. 908
Standard Quantity, 10

Complete information on holders is given on page 26.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| Complete Unit, Glass and Reflector 952 | 100, 150, 200 | 18 | 9 | 4 | 40 |

When glassware is ordered separately, the following catalog number should be used

| Catalog No. | For Unit | Diameter of Glass | Standard Package | Weight |
|---|---|---|---|---|
| 5468 x 10 Genco | No. 952 | 10 inches | 4 | 15 lbs. |

For those locations where light above the unit is not required, but where the other features of this design are essential, the Glassteel Unit will be supplied without the openings in the top. Then the units should be ordered thus: No. 952 without top openings.

B-Heel Reflector—Holder No. 822

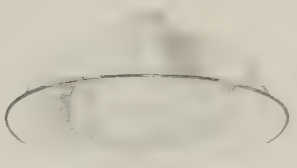
B-Heel Reflector—Holder No. 908

SCHEDULE R

# GLASSTEEL DIFFUSER

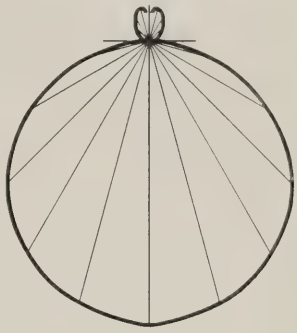
### For Mogul Base Sockets

### For 300 and 500-watt Mazda C Lamps.



The Glassteel Diffuser consists of an inner glass globe which totally diffuses the light, and a white porcelain-enameled reflector which directs most of the light downward. Apertures in the top of the reflector allow some light to pass upward.

It efficiently produces diffused illumination for those industries where the best quality of illumination is required. They should be spaced one and one-half times their height above the working plane.



Characteristic Distribution

## Reflectors and Separable Holders

No. 622
Standard Quantity, 10

No. 909
Standard Quantity, 10

Complete information on holders is given on page 27.

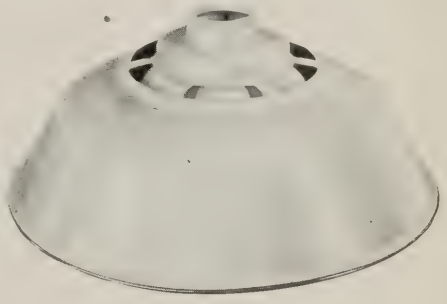
| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| Complete Unit, Glass and Reflector 953 | 300-500 | 21 | 10 | 4 | 50 |

When glassware is ordered separately, the following catalog number should be used

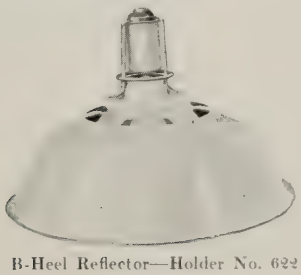
| Catalog No. | For Unit | Diameter of Glass | Standard Package | Weight |
|---|---|---|---|---|
| 5468 x 12 Genco | No. 953 | 12 inches | 4 | 15 lbs. |

**Standard B-Heel Type**

**For use with any of the Ivanhoe Holders shown here. The various combinations of reflector and holder are illustrated at the bottom of the page.**



For those locations where light above the unit is not required, but where the other features of this design are essential, the Glassteel unit will be supplied without the openings in the top. Then the units should be ordered thus: No. 953 without top openings.



B-Heel Reflector—Holder No. 622

B-Heel Reflector—Holder No. 909

SCHEDULE R

# IVANHOE GLASS-TOP REFLECTORS DOME TYPE

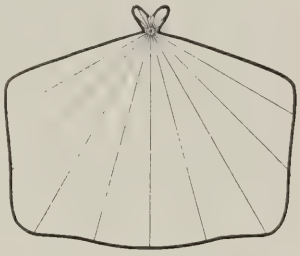
### For Medium Base Sockets

### For 75, 100, 150 and 200-watt Mazda C Lamps

These reflectors are made only in the standard Dome Type. The contour of the Glass-Top Reflectors conforms to that of the RLM Standard Dome Reflectors. Glass-Top Reflectors are porcelain-enameled, green outside and white inside. The metal part of the reflector is one compact piece, the form and the heel being connected by substantial legs rigidly welded.

A glass section of good quality opal glass of light density and excellent diffusing properties permits a portion of the light to be transmitted above the hanging-height of the reflector. The glass section is firmly held in place by metal clips. The light transmitted by the glass section is not large in comparison with that in other directions, but it is sufficient to serve the definite purpose of relieving the contrast between the areas below and above the plane of the lighting units as well as lighting any equipment, as pulleys, belts and shafting mounted above the level of the reflectors.

For uniform illumination, Glass-Top Reflectors should be spaced not to exceed one and two-thirds times their height above the work.



Characteristic Distribution

## Dome Type Glass-Top Reflectors and Separable Holders

No. 902
Standard Quantity, 50

No. 822
Standard Quantity, 10

No. 908
Standard Quantity, 10

Complete information on holders is given on page 26.

| Ivanhoe No. Use this Number in Ordering | Dimensions in Inches | | Packing | |
|---|---|---|---|---|
| | Diameter | Depth | No. in Standard Package | Approx. Lbs. Shipping Weight |
| BEDD-75-G. T. (For 75-watt Mazda C Lamps) | 12⅛ | 5½ | 10 | 25 |
| BEDD-100-G. T. (For 100 and 150-watt Mazda C Lamps) | 14⅛ | 6½ | 10 | 30 |
| BEDD-200-G. T. (For 200-watt Mazda C Lamps) | 16⅜ | 7¾ | 10 | 35 |

### Extra Glass Tops for Glass-Top Reflectors

| | | | |
|---|---|---|---|
| 6062 | Glass Tops are of the same dimensions for all sizes of Glass-Top Reflectors..... | 40 | 50 |

**Glass-Top Reflector Dome Type with B-Heel For use with any of the Ivanhoe Holders for B-Heel Reflectors shown on page 26, or with any standard Form O Holder.**

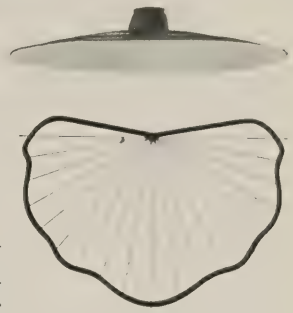
SCHEDULE R

# PORCELAIN-ENAMELED WIDE TYPE FOR OUTDOOR LIGHTING

### For Medium Base Sockets

### For Mazda C Lamps from 75 to 500 Watts, Inclusive

These reflectors are porcelain-enameled, green outside and white inside. They are weather-proof, and the solid-top extension provides for easy wiring. For yard lighting they are usually spaced from two and one-half to five times their mounting-height. They should not be used indoors.



Characteristic Distribution

## Weatherproof Reflectors—Solid Extension with Sockets

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| †REW-75 | 75 | 14 | 5¾ | 10 | 30 |
| †REW-100 | 100, 150 | 16 | 5⅞ | 5 | 25 |
| †REW-200 | 200 | 18 | 6⅛ | 5 | 30 |
| REW-500 | 300, 500 | 18 | 7½ | 5 | 35 |

**R Type with Solid Top Containing Medium Porcelain Socket**

**R Type with Solid Top Containing Mogul Porcelain Socket**

†Locking sockets will be furnished for 40 cents list additional. Extra Keys, 7 cents each list. Pull chain sockets will be furnished for 80 cents list additional.

SCHEDULE R

# SHALLOW DOME PAINT-ENAMELED DISTRIBUTING REFLECTORS

## For Medium Base Sockets

## For 25, 40, 50, 60, 75, 100 and 150-watt Mazda Lamps

Paint-enameled reflectors, green outside and white inside, are applicable for service with the smaller Mazda lamps where low price is an important consideration. They may be spaced from two to two and one-half times their mounting-height for rough work, but for uniform illumination this ratio should not exceed one and two-thirds.

### Reflectors and Separable Holders

**Standard B-Heel Type**
**For use with any of the Ivanhoe Holders shown here, or with any standard Form O Holder. The various combinations of reflector and holder are illustrated at the bottom of the page.**

No. 902
Standard Quantity, 50

No. 822
Standard Quantity, 10

No. 908
Standard Quantity, 10

Complete information on holders is given on page 26.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| *BPD-25 | 25, 50 Mill Type | 8 | 3 | 10 | 12 |
| *BPD-50 | 25, 40, 50 Mazda B | 10¼ | 3⅝ | 10 | 15 |
| *BPD-75 | 60 Mazda B<br>50, 75 Mazda C | 12¼ | 4¼ | 10 | 25 |
| *BPD-100 | 100, 150, 200 | 15¼ | 6¼ | 10 | 30 |

*The D types of these reflectors for attaching directly to brass shell sockets as illustrated on page 8, are the DPD-25, DPD-50, DPD-75 and DPD-100. They can be obtained at a cost of 15c additional to the List Price of the corresponding B type reflectors.

B-Heel Reflector—Holder No. 902

B-Heel Reflector—Holder No. 822

B-Heel Reflector—Holder No. 908

SCHEDULE R

# SHALLOW DOME PORCELAIN-ENAMELED DISTRIBUTING REFLECTORS

## For Medium Base Sockets

## For 25, 40, 50, 60, 75, 100, 150 and 200-watt Mazda Lamps

Characteristic Distribution

Where requirements are not exacting, as in storerooms and warehouses, these reflectors may be spaced from two to two and one-half times their height above the work. The R L M standard line, listed on page 10, is recommended for use with MAZDA C lamps where uniform illumination is desired.

### Reflectors and Separable Holders



No. 902
Standard Quantity, 50

No. 822
Standard Quantity 10

No. 908
Standard Quantity, 10

No. 608
Standard Quantity, 10

**Standard B-Heel Type**

**For use with any of the Ivanhoe Holders shown here, or with any Standard Form O Holder. The various combinations of reflector and holder are illustrated at the bottom of the page.**

Complete information on holders is given on page 26.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| *BED-25 | 25, 50 Mill Type | 8 | 3 | 10 | 15 |
| *BED-50 | 25, 40, 50 Mazda B | 10¼ | 3⅝ | 10 | 20 |
| *BED-75 | 60 Mazda B<br>50, 75 Mazda C | 12¼ | 4¼ | 10 | 25 |
| *BED-100 | 100, 150, 200 | 15¼ | 6¼ | 10 | 35 |

### Weatherproof Reflectors—Solid Extension with Sockets

**R Type with Solid Top Containing Porcelain Socket**

| | | | | | |
|---|---|---|---|---|---|
| RED-75 | 60 Mazda B<br>50, 75 Mazda C | 12¼ | 6¾ | 10 | 30 |
| RED-100 | 100, 150, 200 | 15¼ | 8⅞ | 5 | 25 |

*The D types of these reflectors, for attaching directly to brass shell sockets as illustrated on page 8, are the DED-25, DED-50, DED-75 and DED-100. They can be obtained at a cost of 15c additional to the List Price of the corresponding B type reflectors.

B-Heel Reflector—Holder No. 902

B-Heel Reflector—Holder No. 822

B-Heel Reflector—Holder No. 908

B-Heel Reflector—Holder No. 608

SCHEDULE R

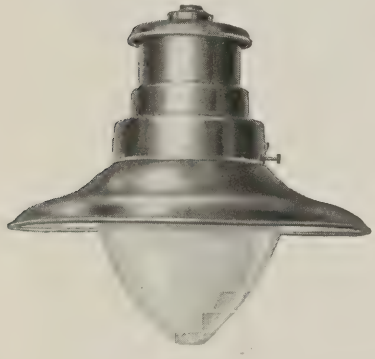
# WEATHERPROOF ENCLOSING UNITS FOR MAZDA C LAMPS

## For Medium and Mogul Base Sockets

No. 804, No. 806 and No. 808 are weather-proof. They are furnished with porcelain-enameled reflectors, green outside and white inside, which gives an effective downward distribution of light. The enclosing globes are of Genco, an opal glass which gives excellent diffusion with low absorption.

No. 754, No. 756 and No. 786 are also weather-proof, and provided with Genco globes. The standard finish of the metal parts is green porcelain enamel.

**Porcelain-Enameled Weather-proof Units**



| Ivanhoe No. | Description | Recommended Mazda C Lamp Watts | Dimensions in Inches | | | Packing | |
|---|---|---|---|---|---|---|---|
| | | | Depth Over All | Max. Diam. | Size of Fitter | No. in Stand. Qua'ty | Appro. Lbs. Ship'g Wt. |
| | **For Medium Base Sockets** | | | | | | |
| 804 | Fixture and Glass | 100, 150, 200 | 12 1/8 | 12 | 6 | 4 | 35 |
| 805 | Fixture only | | 5 3/4 | 12 | 6 | 4 | 15 |
| 775 | Glass only | | 8 | 8 | 6 | 4 | 20 |
| | **For Mogul Base Sockets** | | | | | | |
| 806 | Fixture and Glass | 300, 500 | 13 3/4 | 15 | 6 | 4 | 45 |
| 807 | Fixture only | | 9 1/8 | 15 | 6 | 4 | 25 |
| 775 | Glass only | | 8 | 8 | 6 | 4 | 20 |
| 808 | Fixture and Glass | 750, 1000 | 18 | 15 | 8 | 4 | 65 |
| 809 | Fixture only | | 8 7/8 | 15 | 8 | 4 | 30 |
| 774 | Glass only | | 11 3/4 | 12 | 8 | 4 | 35 |

**Porcelain-Enameled Weather-proof Units**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **For Medium Base Sockets** | | | | | | |
| 754 | Fixture and Glrss | 100, 150, 200 | 12 1/8 | 8 | 6 | 4 | 35 |
| 755 | Fixture only | | 4 1/2 | 6 | 6 | 4 | 15 |
| 775 | Glass only | | 8 | 8 | 6 | 4 | 20 |
| | **For Mogul Base Sockets** | | | | | | |
| 756 | Fixture and Glass | 300, 500 | 13 3/4 | 8 | 6 | 4 | 36 |
| 757 | Fixture only | | 6 3/8 | 6 | 6 | 4 | 16 |
| 775 | Glass only | | 8 | 8 | 6 | 4 | 20 |
| 786 | Fixture and Glass | 750, 1000 | 18 | 12 | 8 | 4 | 55 |
| 759 | Fixture only | | 6 7/8 | 8 | 8 | 4 | 20 |
| 774 | Glass only | | 11 3/4 | 12 | 8 | 4 | 35 |

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# PORCELAIN-ENAMELED REFLECTORS FOR VAPOR-PROOF FITTINGS

### For 60, 75, 100, 150 and 200-watt Mazda Lamps

These reflectors are recommended for use in places where the lamp base and socket must be protected from acid fumes or moisture and where vapor-proof fittings are used.

The reflectors listed here fit various standard conduit fittings. They are attached to these fittings with the standard reflector holders available. Ample clearance is allowed in the extension for the globe and guard as listed for these fittings. They are porcelain-enameled, green outside and white inside, and the complete unit in each case is vapor-proof.

For uniform illumination they should be spaced not to exceed one and two-thirds times the mounting-height.

| Ivanhoe No. | Type of Fitting | Recommended Lamp Size in Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|---|
| | | | Diam. | Depth | No. in Standard Package | Approx. Pounds Shipping Weight |
| 930 *VED-60 | For Type V Fittings | 60 | 12 | 4⅞ | 10 | 25 |
| 931 *VEDD-75 | For Type V Fittings | 75 | 12 | 5⅝ | 10 | 25 |
| 932 *VEDD-100 | For Type VH Fittings | 100, 150 | 14 | 6¾ | 10 | 30 |
| 933 *VEDD-200 | For Type VH Fittings | 200 | 16¼ | 8 | 5 | 25 |

No. 930

Nos. 931-932-933

*Do not have clips; otherwise same as illustrated.

The above reflectors are attached to the condulet bodies by means of reflector holders or holder guards supplied by the manufacturers of Vapor Proof Fittings. These holders are enumerated below.

| Reflector | Condulet Fitting | Reflector Holder | Holder Guards |
|---|---|---|---|
| 930 | V Type | Crouse-Hinds V61 | Crouse-Hinds V71 or V771 |
| 931 | V Type | Unilet 2892 | Unilet 1184 |
| | 5-M Type | VV Fittings 5001 RLM | VV Fittings Guard No. 5003 |
| 932 | VH Type | Crouse-Hinds VH 61 | Crouse-Hinds VH71 and VH771 |
| 933 | VH Type | Unilet 2894 | Unilet 1189 |
| | 5-ML Type | VV Fittings 5002 RLM | VV Fittings Guard No. 5004 |
| VED-60 VEDD-75 | V Series Form 75 | Crouse-Hinds V 875 | Crouse-Hinds V559 and V759 |
| VEDD-100 VEDD-200 | VH Series Form 200 | Crouse-Hinds V 8200 | Crouse-Hinds V2009 |

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# REFLECTORS FOR MAZDA MILL TYPE LAMPS

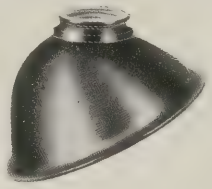
The design of the 25-50-watt MAZDA Mill Type lamp in the P-19 bulb, requires a line of small reflectors to properly serve these lamps for localized lighting. Bowls, angle and distributing reflectors are listed below for use with these lamps. They are available with both the B-heel and D-type fitters for brass or porcelain sockets.

DEM—25

The DEM-25 reflector is especially designed for sewing table lighting and other locations where the reflectors must be small, and not interfere with the operator's view of the work. It is fitted only with the D type holder for brass sockets, and is of the deep bowl type, porcelain-enameled, white inside and green outside.

BEB—25

The BEB-25 is a larger bowl type reflector for localized lighting with the Mazda Mill Type lamp. It is porcelain-enameled, white inside and green outside.



BEL—50

The BEL-50 is a 30° angle type reflector, porcelain-enameled, white inside and green outside. It is for operations where the light must be directed upon the work from the side.

BED—25 and BPD—25

The BED-25 and BPD-25 are distributing type reflectors for Mazda Mill Type lamps; also for localized lighting, for operations where the light must be spread over a wider area. They are white inside, green outside. The BPD is paint-enamel finish and the BED is porcelain-enamel finish.

# SPECIAL SERVICE REFLECTORS

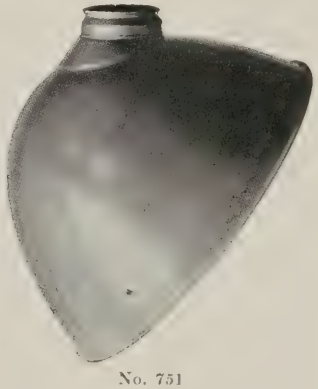
No. 634

The No. 634 reflector is used extensively for sewing machine lighting with 10-15 and 25-watt Mazda C lamps. They are applicable for other kinds of service requiring a small reflector. They are finished in aluminum and provided with a type D holder. This reflector will not accommodate a Mazda Mill Type lamp.

No. 882

No. 888

The No. 882 and No. 888 reflectors have been standardized by the United States Post Office Department for mail case, bag rack, and other furniture in a post office work room. They are porcelain-enameled, green outside and white inside, and are furnished with a simple holder which permits the reflector to swivel. They attach to brass shell sockets.



No. 751

The No. 751 is a 45° angle type reflector. It is porcelain-enameled, green outside and white inside. It is suitable for lighting tennis courts, motion picture studios and industrials where side lighting is required, and vertical illumination is essential on services as high as the mounting-height of the reflector. Use holders Nos. 622, 705 or 909 with this reflector. Detailed recommendations for tennis court lighting may be obtained on request.

| Ivanhoe No. | Recommended Mazda Lamp Watts | Dimensions in Inches | | Packing | |
|---|---|---|---|---|---|
| | | Diameter | Depth | No. in Standard Package | Approx. Lbs. Ship'g Weight |
| 634 | 10, 15, 20 | 3¾ | 4 | 15 | 7 |
| 751 | 300, 500, 750, 1000 | 15¾ | 14¾ | 5 | 30 |
| 882 | 25, 40, 50, 60 | 7½ | 5½ | 10 | 15 |
| 888 | 25, 40, 50, 60 | 8¼ | 6¼ | 10 | 20 |
| DEM-25 | 25, 50 Mill Type | 4¾ | 3½ | 10 | 12 |
| *BEB-25 | | 6½ | 4¼ | 10 | 12 |
| *BEL-50 | | 7 | 5½ | 10 | 15 |
| *BED-25 | | 8 | 3 | 10 | 15 |
| *BPD-25 | | 8 | 3 | 10 | 12 |

*The D types of these reflectors, for attaching directly to brass shell sockets as illustrated on page 8, are the DEB-25, DEL-50, DED-25 and DPD-25. They can be obtained at cost of 15c additional to the List Price of the corresponding B type reflectors.

SCHEDULE R

# COMBINATION OUTLET BOX COVER AND RECEPTACLE

This Combination Outlet Box Cover and medium Base Receptacle can be used with any standard deep or shallow outlet box of the dimensions indicated. It provides a convenient means of mounting reflectors with 2¼-inch B-heels flush against the ceiling. The attachment device is the U N O shade holder so that reflectors can be instantly attached or removed without tools. The cover is conveniently attached to the outlet box by means of the bayonet slots which fit under the heads of the holding screws.

| Ivanhoe No. | Distance Between Outlet Box Attachment Screws | Diameter Outlet Box Inches | Packing | |
|---|---|---|---|---|
| | | | Number in Standard Package | Approximate Pounds' Shipping Weight |
| 943 | 2¾ in. | 3¼ | 10 | 10 |
| 954 | 3½ in. | 4 | 10 | 10 |

# BRACKETS AND SUSPENSION

These may be used on any of the Mazda C enclosing units listed on page 22, or any of the solid top reflectors or holders listed in this catalog excepting holder No. 902

No. 0658

Length, 3¾ inches; diameter of pipe, ½ inch; standard finish, black enamel; standard quantity, 20; approximate shipping weight, 15 lbs.

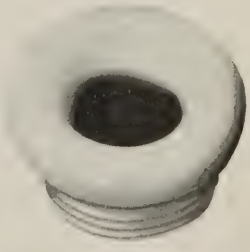
No. 0660

Length, 30 inches; diameter of pipe, ½ inch; standard finish, black enamel; standard quantity, 10; approximate shipping weight, 60 lbs.

# IVANHOE PORCELAIN INSULATING BUSHING

The Ivanhoe Porcelain Insulating Bushing is suitable for all Ivanhoe separable holders and R-Type Reflectors which are tapped for ½-inch pipe. It is made of high quality porcelain, well finished; clean-cut threads; inside top edge beveled.

The Bushing insulates the holder and prevents fraying and wearing of insulation on the wire.



| Catalog Number | Dimensions, Inches | Standard Quantity | Weight |
|---|---|---|---|
| 901 | ½ | 50 | 5 lbs. |

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# HOLDERS FOR B-HEEL REFLECTORS

These holders offer a solid, workmanlike method of suspending B-heel reflectors. They are convenient to wire and install, as they can be put into place whenever convenient, independent of the reflectors.

## For Medium Base Lamps and Reflectors with 2¼-inch Fitters

No. 902

No. 902 is a steel holder finished in green paint. The top band of the holder attaches to the shade holder groove of a porcelain or composition socket, and the bottom band fits around the B-heel of the reflector.

No. 822

This is a porcelain socket holder, tapped at the top for a half-inch conduit. It attaches to the B-heel by means of three clamps which are locked into place by a ring.

No. 908

The 908 holder is for 2¼" B-heel reflector. It consists of an outer shell and cap of cast aluminum, enclosing a medium porcelain socket with a fitting tapped for ½" conduit. The heel of the reflector is gripped by two spring clamps which keep the reflector firmly against the flange in the outer shell as the cap is screwed down over the fitting. There are no screws or lock nuts to adjust, so that no tools are necessary when attaching or removing the reflector. Being of cast aluminum the holder is light, strong and unaffected by weather.

No. 608

No. 608 holder is for 2¼" B-heel reflector. It consists of a drawn aluminum shell containing a medium porcelain socket. The reflector is attached or removed by a turning motion, and held securely upon a bronze spring. The design embodies the well known bayonet coupling principle, the lugs on the side of the B-heel engaging a formed wire ring made of spring bronze, which is inside of the shell. The top casting is tapped for ½" pipe. There are no screws or lock nuts to adjust, so that no tools are necessary when attaching or removing the reflector. Being of aluminum the holder is light, strong and unaffected by weather.

No. 884

The No. 884 set screw holder is tapped at the top for ½" conduit. It is finished in green porcelain enamel, and contains a porcelain socket. Three set screws attach the holder to the B-heel and each screw is provided with a tension-spring wire to prevent its being loosened by vibration.

## Holders including sockets can be supplied with lamp-grip sockets if so desired

| Ivanhoe No. | Dimensions | | Packing | |
|---|---|---|---|---|
| | Diameter, Fitter Inches | Depth, Inches | Number in Standard Package | Approximate Lbs. Shipping Weight |
| 608 | 2¼ | 3¾ | 10 | 10 |
| 822 | 2¼ | 2¾ | 10 | 10 |
| 884 | 2¼ | 3¼ | 10 | 10 |
| 902 | 2¼ | ⅞ | 50 | 10 |
| 908 | 2¼ | 3 1/16 | 10 | 10 |

SCHEDULE R

# HOLDERS FOR B-HEEL REFLECTORS

These holders offer a solid, workmanlike method of suspending B-Heel reflectors. They are convenient to wire and install, as they can be put into place whenever convenient, independent of the reflectors.

This illustrates how the cover of the holder is raised on the pipe in order to wire the holder and clamp it to the B-heel.

## For Mogul Base Lamps and Reflectors with 3¼-inch Fitters

No. 622

This is a porcelain socket holder, tapped at the top for a half-inch conduit. It attaches to the B-heel by means of three clamps which are locked into place by a ring.

No. 705

This is a green porcelain-enameled set-screw holder containing a porcelain socket. It is tapped at the top for a half-inch conduit, and attaches to the B-heel by two lugs and a set screw. The screw is provided with a tension spring wire to prevent its being loosened by vibration.

No. 909

The No. 909 holder is for 3¼" B-heel reflector. It consists of an outer shell and cap of cast aluminum, enclosing a mogul porcelain socket with a fitting tapped for ½" conduit. The heel of the reflector is gripped by two spring clamps which keep the reflector firmly against the flange in the outer shell as the cap is screwed down over the fitting. There are no screws or lock nuts to adjust, so that no tools are necessary when attaching or removing the reflector. Being of cast aluminum the holder is light, strong and unaffected by weather.

No. 609

No. 609 holder is for 3¼" B-heel reflector. It consists of a drawn aluminum shell containing a mogul porcelain socket. The reflector is attached or removed by a turning motion, and held securely upon a bronze spring. The design embodies the well known bayonet coupling principle, the lugs on the side of the B-heel engaging a formed wire ring made of spring bronze, which is inside of the shell. The top casting is tapped for ½"pipe. There are no screws or lock nuts to adjust, so that no tools are necessary when attaching or removing the reflector.

Being of aluminum the holder is light, strong and unaffected by weather.

## Holders including sockets can be supplied with lamp-grip sockets if so desired

| Ivanhoe No. | Dimensions | | Packing | |
|---|---|---|---|---|
| | Diameter, Fitter Inches | Depth, Inches | Number in Standard Package | Approximate Lbs. Shipping Weight |
| 622 | 3¼ | $5\frac{3}{4}$ | 10 | 25 |
| 705 | 3¼ | $5\frac{1}{4}$ | 10 | 25 |
| 909 | 3¼ | $4\frac{7}{8}$ | 10 | 30 |
| 609 | 3¼ | $5\frac{11}{16}$ | 10 | 25 |

# INDEX



# ILLUMINATION DATA

# Ivanhoe Products may be ordered from these publications

Commercial Glassware—Keldon, Ace, Trojan and Glass Reflectors—from Catalog No. 333.

Bowls and Shades with Rozelle Color Decorations from Catalog No. 355 and Supplement No. 390.

Molded, Blown and Pressed Ornamental Glassware from Catalog No. 375.

IVRE and SUDAN Glass with etched Designs from Catalog No. 388.

Lighting Equipment for Railroad Service from Catalog No. 373A.

The Ivanhoe Ivadine from Folder No. 40-321.

Prices are not listed in all the above publications

Price Lists should be requested with the various catalogs and folders